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THE APPLICATION OF GROUP DECISION MAKING
PROCESSES TO THE MILITARY ORGANIZATION

RILEY D. MIXSON

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Riley D. Mixson

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by

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Lieutenant, United States Navy

Submitted in partial fulfillment of
the requirements for the degree of

MASTER OF SCIENCE
IN
MANAGEMENT

United States Naval Postgraduate School
Monterey, California

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IN

MANAGEMENT

from the

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ABSTRACT

The military on the American scene, comprises the largest and most complex organization known. Multitudinous decisions are necessarily an integral of such a system all the way from the basic unit, or level, on through the highest; both in war and in peace. Due to the possible impact on the lives of millions of Americans who comprise the military world, as well as the national security and the gross national produce, it is imperative that the best possible and most timely decisions be reached. In certain areas of responsibility, group-decision making techniques may allow a closer approach to this utopian state. Initially, an over-view of the group decision making process is presented as gleaned from available information on the subject. A typical military organization is described to serve as a model for this paper. Some general situations are presented wherein decisions must be or have been rendered and these situations are then compared to the overall procedures suggested in the initial phase of the paper. Finally, a conclusion is drawn as to whether the group decision making procedures can be successfully applied to a military organization.

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CHAPTER I

OVERVIEW OF THE GROUP DECISION MAKING PROCESS

Much has been written in regard to group decision making processes and a brief overview of the subject will herein be presented. Included in this overview will be an attempt to list observable and controllable variables of the system and some of the advantages which stem from the group process.

REVIEW OF THE LITERATURE

Definition. Decision in its present usage suggests the coming to a conclusion. According to Webster's Dictionary of Synonyms, "it presupposes previous consideration of a matter causing, wavering debate, or controversy and implies the arriving at a more or less logical conclusion that brings doubt, debate, etc., to an end."¹ Or, in plain language, it involves a conscious choice or selection of one behavior alternative from among a group of two or more behavior alternatives. If only one alternative exists, then of course there is no decision to be made and nothing to be gained from any decision making process.

Nature of the problem. For any decision making process there has to be a good understanding of the nature of the problem to which we are seeking a solution. Therefore, in order to start the solution in the right direction we have to ask the right question or questions as a basis for our research. After the right questions have been asked, there are three steps involved in the decision-making process: First, an individual must become aware of as many as possible of those behavior

¹"Decide," Webster's Dictionary of Synonyms.

alternatives which are relevant to the decision to be made. Secondly, he must define each of these alternatives, a definition which involves a determination of as many as possible of the consequences related to each alternative under consideration. Thirdly, the individual must exercise a choice between the alternatives, that is, make a decision.²

Pros and Cons of the group process. Many tools have been developed as an aid in the decision-making process: utility theory, risk and uncertainty, statistical decision theory, theory of games, and various psychological approaches to decision making. In recent years much attention has been focused on group size as a determinant of the quality and stability of decision making.

In a recent book by Kelley and Thibault, the literature with regard to individuals as compared to group problem solving performance has recently been summarized, and the conclusion drawn that groups are generally superior to individuals.³ They allege that there are several indications of the considerable ability of a group to gather and retain a wide range of information, an attribute most authorities would agree to be important for intelligent decision making.

Some authors, however, have debated, or found exception to, the principle that ideas produced by persons working in groups are always

²Robert Tannenbaum, and Fred Massarik, "Participation by Subordinates in the Managerial Decision Making Process," Institute of Industrial Relations (University of California, 1950), p. 415.

³John W. Thibault, and Harold H. Kelley, The Social Psychology of Groups (New York: John Wiley and Sons, Inc., 1959).

useful. Allport concluded from his researches that under the stimulus of co-workers, the intellectual or implicit responses of thought are hampered rather than facilitated.⁴

In a study conducted by the Franklin Institute it was discovered that face-to-face problem solving was not as effective as telephonic or radio conferences.⁵ In this experiment with staff officers, all problem materials were distributed prior to the experimental period. For each test only the one mode of communications was available for any particular problem and adequacy ratings were assigned as indicated:

<u>Telephone</u>	<u>Radio I</u>	<u>Radio II</u>	<u>Conference</u>
26.0	23.0	23.8	19.8

This study was not meant to be directly applied to the solution of operating problems but was an experiment in communication media. Nevertheless, the results are interesting and reasons for the low score in conference situation will be expounded on later in this paper.

As opposed to these views, Lorge found that groups produce useful and novel ideas.⁶ The work done on brainstorming suggests that persons can generate many more creative ideas when working together than when working alone. Of course, as Taylor points out, group problem solving in general depends a great deal upon the relations among the members,

⁴Allport, F. H., Social Psychology (Boston: Houghton-Mifflin, 1924).

⁵Arnold E. Horowitz, Stephen D. Benson, and Edward P. Buckeley, "A Pilot Study on the Relation of Communication Media to Staff Decision Making," The Franklin Institute, (Philadelphia, Penna., 1961), pp. 4-9.

⁶I. Lorge and others, "Solution by Teams and by Individuals to a field problem at different levels of reality," Journal of Educational Psychology, 1955, pp. 17-24.

the type of leadership, and nature of the problem. Several studies have shown that, as compared to individuals, groups are superior at framing the question to ask in order to obtain information necessary for problem solving. If this be true, then more effective solutions to a problem could be reached by asking the right question initially, rather than an individual stumbling upon it halfway through his research of alternatives.

In the process of administering a financial risk examination to a group of 131 college sophomores and 42 Naval Management Postgraduate Students (Appendix B),⁷ the question was posed: "Do you think a more rational answer to the problems could have been reached by participation in a small group of three to five persons?" The following results were tabulated:

	<u>YES</u>	<u>NO</u>
Naval Postgraduate School	13	29
College Sophomores	116	15

These results could have been easily predicted because there was less of a decision making process involved with the postgraduate students due to their past education in business and statistics giving them more immediate, rational answers to the problems posed.

The college sophomores, on the other hand, had virtually no education in statistics, business, or finance and thus were more uncertain concerning which of the answers was the more rational. Accordingly, they felt that the wider range of knowledge inherent in a group, would allow them a basis for more intelligent decision making. See comments of students (Appendix B).

⁷Risk Examination developed by Professor Keenan at Western Michigan, 1962.

In accepting the premise that group problem solving leads to either better decisions or more successful decisions, we postulate that almost any organization can utilize subordinates in all but the last step of the decision-making process as outlined on page 1 of this paper. The selection of a choice between alternatives remains the sole responsibility of the manager. However, subordinates can present various alternatives and render suggestions which may help the manager in reaching a more optimum decision, and in this respect are participating in the group decision-making process.

The participation of the subordinate can be either that of a group with the manager or that of the subordinate and his boss. This technique should lead to better decision making because the more alternatives presented, the greater the probability of maximizing results.

VARIABLES INVOLVED

There are many variables which have to be considered as to whether or not the problem calls for an individual or a group decision. These variables can be broken down into three types of forces which are significant to the executive in making his choice.⁸ These variables are:

- (1) Forces in the manager himself
- (2) Forces in the subordinates
- (3) Forces in the situation

These three categories provide a convenient system of categorizing the rules or conditions which should be complied with in order to ensure more successful decision making. The following discussion concerning

⁸Robert Tannenbaum and Warren H. Schmidt, "How to Choose a Leadership Pattern," Harvard Business Review, 36:98 ff, March-April, 1958.

these three categories is a synthesis of our research on the variables concerning group decision making.

(1) Forces in the manager. There are several forces, primarily attitudinal in nature, which involve the superior member (or members) of the group which will tend to affect the efficiency of the decision-making procedure. One of these is the extent to which the superiors believe other individuals should have a share in decisions which affect them. Obviously, if the superior is definitely of the opinion that he alone has the necessary qualifications to render a decision, the group process is doomed to failure before it even begins - if, indeed, it ever did start under such supervision. Another factor is the manager's own leadership inclination. Without going into a discussion on leadership and its myriad facets, we can see how a leader views his leadership functions, or duties, will either adversely or favorably influence a group decision session. Closely associated with leadership is his ability to direct and communicate his ideas to the group. Last, but certainly an important aspect, is the feeling the superior has relative to the judgment and capabilities of the more junior members of the proposed group. Whether through his own observations, reports from others, or nothing more than a psychological rapport with the individuals concerned, the superior must have confidence in his subordinate members.

(2) Forces in the subordinates. Subordinates should display a willingness to accept responsibility and have already displayed an interest in the problems which confront the organization. Hand in glove with this is their personal identification with the goals of the organization, and of course, their knowledge and experience levels.

In order for group decisions to be really effective, the subordinate must be capable of becoming psychologically involved, and therefore, must display at least a minimum amount of intelligence. Further, he must be able to communicate or express his thoughts to all concerned and feel that he is making some contribution to the overall effort. The subordinate who is a follower will not fit into this kind of decision-making process.

It is apparent that for personality types shaped intensely by an authoritarian system, opportunities for participation may be regarded as signs of weakness and leadership incompetence and, on that basis, may be rejected unequivocally.⁹

When a subordinate is able to become psychologically involved he is apt to see that the success of the decision he is participating in may also further his own goal. As in the case of business, a subordinate could visualize that the furtherance of the goals of the organization might also increase his job security and pay benefits. In a military organization, if the "outfit" does well in its competitive exercise or administrative inspection, the Commanding Officer will be more apt to reward his efforts with good fitness reports and recommendations for advancement in rank.

Thus, participational activity not only allows the individual a closer insight into the organization, but also tends to motivate him by the association of his personal goals with those of the organization. He tends to associate himself with the organization and feels a certain pride in its accomplishment. In short, the subordinate so motivated will become a "company man."

Robert Tannenbaum and Fred Massarik, "Participation by Subordinates in the Managerial Decision-Making Process," Institute of Industrial Relations (University of California 1950), p. 415.

(3) Forces in the situation. Situational factors are concerned more with time pressures, group effectiveness, and complexity of the problem. Associated with time pressure is the urgency of the problem which could lead to concentrated committee work or to impressive accomplishments on paper only. If it becomes necessary to arrive at a decision rapidly, the manager may consider it impractical to hold a group meeting in reaching a particular decision. If he is familiar with all the background information and relevant data, it may be more prudent for him to make the decision himself. The problem, on the other hand, could be so complex that subordinates may not be capable of or have the proper experience and training necessary to help reach a logical solution. In this case the manager with a diversified background and experience may want to make the decision himself. Under the factor group effectiveness would come such variables as ease of communication, the degree of mutual understanding and freedom to participate in the discussion, and the ability of the group to present an orderly treatment of problems. One of the primary considerations that apply to all members comprising the group is that they must be educated relative to the situation, the goals, and the process. Participation on the part of any group or its parts, may fail if the group tries to consider any matters outside the scope of experience of the individual.

Consideration and deliberation of the information presented in the above forces, and that presented by many other writers on the subject, will reveal that certain forces must be taken under advisement in the acceptance of the group process as a decision-making procedure. Even though participation in a group decision may have beneficial aspects it is not always the most efficient method of achieving the goals of the organization.

We have separated these three main forces for clarification of variables and rules realizing that there is continuous interaction between the forces and the variables within each force. This interaction should improve the quality of decisions due to the breaking down of communication barriers between the superior and his subordinate.

Communication. Communication really comes into focus once we have the right attributes in our subordinates and the right environment for group decision making. Captain B. T. Bashore has raised the problem of communication in military organization:

With the new organizational configuration it is possible that frequent communications might be required between, say, a captain at company level and a colonel at brigade level. The large gap in status, age, and experience, between these two, the colonel being perhaps many years away from the time he had to deal with company level problems, may very well make communications difficult. The captain and the colonel would have less knowledge in common, and the scope of the context in which each makes decisions would probably be harder to bridge in communicating their needs and desires.¹⁰

Sometimes it is very difficult for a subordinate to communicate with a man who ranks high above himself in stature, experience and rank. The manager has to recognize this and start working with the satisfaction of the participants as attitudinal variables. We want our subordinates' willingness to come back and work under the conditions we have set forth and to gain satisfaction from contributions made at his level. Since groups are composed of individuals, group functioning must avoid tension and anxiety and supply a certain amount of satisfaction in the process.

¹⁰Captain B. T. Bashore, Military Review, 1961, XLI, No. 1, pp. 24-28.

We have to make an attempt to control personality variables and not let them interfere with the decision process.

The problems involved in interactions of subordinates with superiors helps to explain the outcome of the experiment alluded to on page three of this paper. Perhaps the reason why face-to-face conferences at the staff level did not lead to as rapid problem solving as other media of communication was due to the initial difficulty in overcoming rank/status relationships. From our own past experiences and those of fellow officers, we can testify that there is this feeling of uneasiness when first thrown into a "high level" decision-making group. This uneasiness gradually disappears with group interaction.

ADVANTAGES OF GROUP PARTICIPATION

Since the missions of our Armed Forces are accomplished through our officer and enlisted personnel, it follows that they also have a considerable interest in the decisions rendered by their superiors. Because of this possible interest, "subordinates may have a strong desire, particularly in a nation with deeply-ingrained democratic traditions, to participate in the determination of matters affecting them."¹¹

Enlisted personnel. There are many advantages which may stem from the use of participation with these men at the lower level of the military

¹¹Robert Tannebaum, and Fred Massarik, "Participation by Subordinates in the Managerial Decision-Making Process," Institute of Industrial Relations (University of California, 1950), p. 410.

organization. The following are some of the principle ones as applied to the military organization.

(1) A high rate of output which leads to reduced "down time" of equipment and more effective quality control measures.

(2) A reduction in the rate of absenteeism or absence without leave.

(3) A reduction in the number of grievances leading to greater morale and understanding among the men.

(4) A greater readiness to accept changes or understanding of what's wrong with "the good old way" of doing things.

(5) And last, but perhaps one of the most important reasons for participation is the training a subordinate receives through participation. This involvement in the decision process is invaluable in giving the subordinate experience and wisdom which will enable him to be a better manager when placed in a higher position.

All of the reasons listed above should lead to greater ease in handling the men with a resulting reduction in Captain Mast's, Court Martials, and other disciplinary action. Individuals participating in the decision process should have a greater sense of understanding and belonging resulting in a greater sense of responsibility in their tasks and a greater willingness to accept authority.

Officer personnel. While the above five advantages accrue primarily to enlisted men, there are also tremendous benefits to be gained from our junior officer personnel through participation. D. McGregor has written:

One of the most important conditions of the subordinate's growth and development centers around his opportunities to express his ideas and to contribute his suggestions before his superiors take action on matters which involve him. Through participation of this

kind he becomes more and more aware of his superior's problems, and he obtains genuine satisfaction in knowing that his opinions and ideas are given consideration in the search for solutions.¹²

Since managers are making decisions which affect their subordinates, through participation the individual who was just "doing his job" may recognize the contribution he is making and his goals become that of the organization.

Ernest Dale has written that "The acid test of managerial decentralization is therefore the degree to which executives participate in decision-making."¹³ Or it may be put in this way: How far has the company moved away from one-man control of all major decisions? Dale also implies that increased efficiency will be brought about by splitting the total organization into divisions of smaller units and delegating to each unit decision-making powers. This practice has been followed by General Motors Corporation, and of course, is implicit in any military organization. The advantages to the military's relatively junior officers from this type of decentralization are numerous. A few of these advantages are:

(1) Officers will be closer to the point of decision making. Decisions will be made at levels where the executives are familiar with the factors involved. This also cuts down the time and communications required to make a decision by not having to check with the chief executive on every matter affecting the organization.

¹²Ibid, p. 411

¹³Ernest Dale, Planning and Developing the Company Organization Structure, (American Management Association), 1952, p. 107.

(2) Junior officers will become more like executives by accepting responsibility instead of running to "headquarters" on every problem that comes up. Thus efficiency will be increased by a better utilization of their time and abilities.

(3) The quality of decisions is likely to improve as their magnitude and complexity is reduced, and as the chief executives are relieved of possible overwork.

(4) Paper work at the top levels of the organization will be considerably reduced by delegation of responsibility and decision-making functions.

(5) The other advantages which apply to the organization are the same as those listed for enlisted personnel in the military organization.

Since we have now gained an overall appreciation of the group-making procedure and have extracted some of the variables that affect the process, it seems appropriate to take a closer look at the military organization. By so doing, some of this paper's previous references to the military might be more closely related to the military organization. Further, a more appropriate frame of reference may be provided for the remaining ideas and extrapolations which are to be presented.

CHAPTER II

MODEL OF A TYPICAL MILITARY ORGANIZATION

In general, the military organization is thought of as the epitome of the formal organization, with carefully delineated lines of communication and strictly defined billets or jobs. It has been considered by a large percentage of interested students as an authoritarianistically oriented bureaucracy, with all the connotations and conditions of this type of organization as championed by Weber.¹⁴ Though this view does have some basis in fact, we find that through the offices of sociometrically inclined writers and researchers, or due to the changing climate of organizational theory itself, the degree of formalization is variable among different military organizations. Of course, it's not particularly surprising that such should be the case, no more so than finding such variance among business, governmental, ecclesiastical, or any other 'type' organization. The characteristic variance applies as well to the military of the United States as to that of other countries; indeed, such deviation even occurs from unit to unit of a particular branch of military service. In spite of these differences, there is normally a greater degree of orientation towards the organizational goals throughout the military structure than can be found in other types of organizations. This apparently contradictory idea is attributed to the fact that the military organization usually employs a well-defined, well-publicized and all-pervading doctrine which suffuses the entire structure

¹⁴Max Weber, Essays in Sociology, (H.H. Gerth and C. Wright Mills), 1946.

vertically and horizontally. Thus, the general nature of formalization and goal orientation in the military.

THE BASIC MILITARY ORGANIZATION

In the light of the foregoing, it can be seen why it is somewhat difficult to conjure up an image of a typical military organization without referring to the insufficient representation of an organizational chart. As has been repeatedly brought out by students of organization theory, the familiar 'pyramid' is too neat and cold a representative picture and the 'web' is only slightly better. It is proposed then, that a combination of these two structural types will present a more complete, though relatively simple, pattern. This pattern, or model, shall be referred to as the 'Basic Military Organization'. (See Appendix A, Figure I).

It is felt that this model shows more correctly the relationship of the four principles of internal organization as presented by Mooney and Reiley¹⁵ which are:

- (1) The Coordinative Principle
- (2) The Scalar Principle
- (3) The Functional Principle
- (4) Staff and Line

The Coordinative Principle¹⁶ provides for unity of action in pursuit of a common purpose or the orientation of all activity towards the

¹⁵James D. Mooney, and Alan C. Reiley, The Principles of Organization, (New York: Harper and Brothers, 1939).

¹⁶Ibid, et passim

organizational goal. The unifying forces are doctrine; previously referred to; spirit and morale. Additionally, though, there is a necessity for authority and control to "over-see" the necessary coordination. A glance at Figure I will show that this principle is embodied within the organization-control being provided through the system of formal command lines to each of the several levels depicted. Also, though there are several levels shown, and different orbits of activity on each level, the entire plateau of the lowest level of action is within the purview of the top-most level. This idea may be better understood by reference to Figure II (Appendix A), which also clarifies the use of Dale's¹⁷ "web" suggestion relative to organization form. We can consider the current model (Figure II) as "webs within webs" or "orbits within orbits", in which each lower level orbit is included within the web of authority and influence of each higher level.

The Scalar Principle¹⁸ refers to the form of organization. The word 'scalar' implies a structure of hierarchical nature. As shown in the different levels of operation each higher plateau is of greater value to the total organization. The increased value to the whole then leads us to accept that the levels increase in rank and authority as they become successively nearer to the top level. This thought leads us to the familiarity of the pyramidal organization chart, and it's eventual incorporation into the "hive-skeleton" concept. It should be borne in mind that the principle of scalar also includes, as sub-processes; (a) leadership, (b) delegation, and (c) functional definition. The first of these sub

¹⁷Ernest Dale, op. cit.

¹⁸Mooney and Reiley, op. cit.

ideas is shown in the chart by the fact that each unit of the whole organization has under its purview a miniature "hive-skeleton" of which that unit is the leader. The expanding horizontal development graphically depicts the necessity for delegation and the separate, but contained, orbits of activity lend themselves to the functional definition thought.

The Functional Principle¹⁹ primarily comprises the concept of specialization, but with the specialist still operating internally and as an integral part of the whole organization. Naturally, as a part of the entirety it follows that the specialist should be oriented towards the common goals as well as any other unit or individual. If a group of specialists are to be considered, they can be added to any - or each - plateau shown in the model or within any orbit of operation. Indeed, they may be assigned their own orbit since the model lends itself to expansion, addition or contraction on any level; or to scalar extension; with relative ease.

STAFF AND LINE RELATIONSHIPS

The Staff and Line²⁰ relationship is envisioned as representing authority and staff advice and idea, though the authority is not a double-track system. The only line of direct authority between levels is that as depicted in Figure I. It is necessary that the staff of a particular headquarters pursue their primary purpose of advice, special knowledge and coordinative functioning for the headquarters to which they are directly attached. Additionally, the staff should function as a

¹⁹Ibid

²⁰Ibid

unifying factor between levels in their advice to lower plateau line elements as well as to lower level staffs. This principle is represented by Figure III (Appendix A).

The model, as presented, can show these important relationships of principles of operation, as well as other information.

If lines of interaction other than the strictly formal ones are added to the basic concept, the vital motion and activity of the organization becomes apparent. In Figure IV (Appendix A) we have added pseudo-formal lines between a line unit of one level to the general staff offices of another; between staff members of one level to their opposite numbers on another; and between staffs of one level to their opposite numbers of another; and between staffs of one level. Though only representative lines are shown, it suffices to show how the addition of just these lines - some horizontal and some diagonal - can add life to the model. Addition of all such lines, plus strictly informal lines of interaction would serve to tie the basic pattern into a unified, closely structured and cohesive entirety but, not a solid mass impervious to external influence.

Though Figures III and IV have titles indicated thereon for the units of the several levels, and even the staff offices, there is no implication that the model represents only one type of military organization. The pattern can be applied to any military organization merely by changing the names at each level, changing the number of units on a particular level or in a particular order - (or the number of orbits themselves) or by changing the scalar length. The addition of special staff offices to the staff orbit, and for changing the titles of the offices themselves can be accomplished without affecting the operative characteristics of

the model at all. For example: The topmost level could be called Regiment, Air Group or Destroyer Squadron; the next lower then would be Battalion or Air Squadron or Destroyer Division; next could be Company, Air Flight or DD834, and the lowest would be Platoon, individual aircraft, or department. It's entirely possible to use the model for a combatant, combat support or service-support organization with equal ease, since it appears that the primary differences in the organizations of the military relate more to the name and mission of the particular service rather than to the organizational structure. The point is, the basic model, with minor modifications, may be used to represent any military organization and can, therefore, be referred to as a typical military organization.

Without succumbing to the temptation of further expansion of the hive-skeleton concept at this point, we can turn to the decision making process again and relate group procedures to the typical military organization.

CHAPTER III

SOME MILITARY SITUATIONS FOR DECISION MAKING

It can be readily surmised that decisions are continuously required in the military. This operational trait is integral to the organization all the way from the basic level on through to the highest. It is also apparent that a decision reached on any plateau will affect, at the very least, the level just above and the one just below the level that is immediately concerned with the problem solution. Decision making is an organizational process which is shaped as much by the interaction of managers as it is by the cognitive processes of the individual.

Most of the groups to which the manager is exposed provide him with the intensely specialized point of view of the expert. But since many questions to which he must find solutions are composite generalist problems, he cannot rely on only one view. Hence, various special-interest groups converge or intersect at the managerial point when the decision is made.

During peaceful eras, the emphasis is placed on economical feasibility and efficiency as well as upon the apparently divergent aspect of continually maintaining the best possible combat-readiness posture. At war, the securing of objectives, as assigned, at the least possible cost in men or materials is the omnipresent requirement of any military unit. The achievement of the dichotomous goal places the onus at the decision making process for the direction of the necessary coordinated action in the most correct and effective manner.

SPECIFICATIONS FOR DECISION MAKING

Those decisions (and/or policies) handed down from upper to lower levels will generally contain specification as to: (a) What. The nature of the mission to be accomplished or objective to be attained. (b) Who. That is which unit or units on a particular plateau have the primary responsibility for accomplishing the job. (c) When. A statement of the time frame as to the 'by-date' of the mission. Not absolutely necessary, but often included is: (d) Why. A brief statement of the reasons for the necessity of the job. At successively lower levels the same specifications as previously mentioned will be passed on, with more detail. Additionally, there may be some degree of How the mission will be accomplished, usually in the form of a suggestion or implied by including what materials and or equipment and men will be provided to assist in obtaining the stated objective. The amount of information relative to the 'how' aspect is dependent upon whether the receiving plateau is also the 'working' level, or whether the order is passed on to a lower level for actual accomplishment. When the directive does reach the working plateau, the spread of activity-causing influence becomes horizontal rather than vertical.

Since the very size and relative complexity of the military auto- suggests the necessity for decentralization and this idea leads directly to a degree of autonomy at lower levels, the question arises as to how the organization is kept oriented towards a common goal? As was pointed out previously, doctrine and well-defined publicized policy provides this sense of direction. The greatest degree of autonomy occurs in reaching the decisions which deal with the 'how' problems. These

problems, solved at the working level, cause influence to pass back up the scalar. The normal case is that the how decision will generate requests for support (or the use of more resources) in order to do the job. As these requests pass back up the scalar, decisions must be made at each higher level (considering alternative uses of the resources requested) as to whether the requested support can be provided without the production of undesirable 'spill-over' effects. The upward spread of influence ceases when the request reaches that level which has the organic means to provide the requested support or the authority to negate the request. The system of up and down flow of decision influence provides a check and balance mechanism which helps to provide the greatest probability of sub-optimizing at each level, thereby leading to optimizing for the whole. The idea of sub-optimizing and decentralization is explained in more detail by Alain C. Enthoven, who employs a mathematical approach.²¹

THE MILITARY DECISION-MAKING PROCESS

The military decision-making process is a continuous, self-generating procedure - whether considered in the light of a peaceful atmosphere or a war-waging one. It is obvious that the process can directly affect large numbers of individuals. Indirectly, these same decisions can affect even more persons - families of servicemen, business and social associates, for example. High level decisions can even have a pronounced effect on the flow of money and the economic structure of entire areas, states

²¹Charles J. Hitch, and Roland N. McKean, The Economics of Defense in the Nuclear Age (Harvard University Press, Cambridge, 1963) pp. 361-405.

and even the nation itself. It is, therefore, imperative that the best decisions be made by consideration of the greatest number of alternatives, maximum awareness of side effects (spill-over), and keeping the solution effectively oriented towards organization/national goals. The desirable characteristic becomes clear: to use the techniques, procedures and/or processes that will produce the greatest probability of making the best possible decision for any situation, under any condition, at any time. In addition to the steps that have been made by the use of computerized data, game theory and quantitative decision-making, it appears that the group-decision-making procedures described heretofore may be valuable in reaching the utopian state desired.

CHAPTER IV

COMPARISON OF MILITARY DECISIONS TO GROUP PROCEDURES

As has been implied in previous paragraphs, group decision-making is more concerned with the best use of the elements of judgement and common-sense experience - to be used, not alone, but in consonance with other procedures.

The decision of relating the required training of military units to the available time, facilities and budgetary restrictions is one that is a source of continuous frustration to all levels of the military. Indeed, it often requires that coordinative decisions be made between services, in such areas as transportation requirements, special unit participation and use of training areas. It has been the experience of the writers that all units and levels of operation handle the determination of such requirements by conference, coordinated planning and cross-agreement. In fact, it would be an impossible task for one individual to accomplish. By virtue of this knowledge, we can say that the final decision, or decisions, on training schedules, for example, is the result of a lengthy group-process which necessarily involves a large number of sub-decisions, the majority of which are also group-decisions.

Thus, we see that organization behavior is a complex network of decisional process, all pointed toward their influence upon the behavior of those who do the actual "physical" work of the organization. The anatomy of the organization is to be found in the distribution and allocation of these decision making functions.

The vast amount of detail that is necessary for the compilation of an Operation Plan or an accompanying Administrative Plan implies that

multitudinous decisions are reached before the final product is turned out. Again, these prior decisions are, by and large, the results of innumerable group sessions. The same is true of various contingency plans, prepared in a peace-time situation for the possible eventuality of war. Such resultant collections of decisions obviously do not 'just happen,' nor are they the product of thousands of individual decisions - they are produced by groups of varying size, at various levels, of varying composition but, nevertheless, groups.

In a large bureaucracy no one person "decides" anything. Every decision of importance is the produce of individual and group interaction both inside and outside the organization who are affected by or feel affected by the decision. A large organization is a system of tensions into which each individual is expected to bring work - ways, viewpoints, and outside relationships markedly different from those of his colleagues. It is management's purpose to draw from these forces the elements of wise action consistent with the goals and objectives of the organization.

The final responsibility of any decision-making process always rests with one individual, but the components of a particular decision can be traced through the formal and informal channels of interaction to many individuals who have participated in the formulation of its premises. When all of these components have been analyzed it may appear that the contributions of the individual who made the final decision are minor compared to the overall effort.

INFLUENCE IN DECISION MAKING

In determining who actually makes a decision, we have to judge what

position a person occupies within the organization, how much discretion he is afforded, and what methods the organization uses to influence the decisional premises he selects.

In its most complete form, influence is exercised when a decision promulgated by one person governs every aspect of the behavior of another. On the parade ground, the marching military troops are permitted no discretion what-so-ever. Their every step and bearing, even the length of pace are governed by authority. Frederick the Great is reported to have found the parade ground deportment of his Guards perfect - with one flaw, "They breath," he complained.

More often, influence places only partial limits upon the exercise of discretion. A subordinate may be told what to do, but given considerable leeway as to how he will accomplish his task. In order to analyze the influence or authority which is exhibited in any particular case, it is necessary to dissect the decision into its component parts, and then determine which are left to the subordinate's discretion.

A subordinate officer then, is limited only by the specification of the objective of his unit, and its general schedule. He then proceeds to narrow further the discretion of his subordinates to that portion of the task which is necessary for them in the accomplishment of the overall objective.

Thus, we see that in order to understand the process of decision in an organization, we have to go far beyond on-the-spot orders given by a superior to a subordinate. We have to understand the channels of communication in order to determine what information reaches him relevant to his decisions. The more important and far-reaching these decisions, the more important become those types of influence which do not depend upon the exercise of formal authority.

PLANNING AND REVIEW

There are two techniques that are of key importance in the process of composite decision making and in bringing to bear on a single decision a multiplicity of influences. These two techniques are planning and review.

Planning is important because of the immense amount of detail which is possible to include in them and because of the broad participation which can be secured when desirable. An example is given by Sir Oswyn Murray²² (Appendix B, pp. 45-47).

As can be seen from this example, organizational factors take on considerable importance when compromising between competing values within that organization. Accordingly, the decision rendered by any one individual will affect the degree to which advice offered him by persons elsewhere in the organization actually influences him.

The process of review on the other hand enables those who are in a position of authority in the administration hierarchy to determine what actually is being done by their subordinates. Review is the means whereby the administrative hierarchy learns whether decisions are being made correctly and how the work is progressing at lower levels in the organization. Utilizing this information, improvements can then be introduced by the interaction of superiors with their subordinates which will lead to better decision making procedures.

²²Sir Oswyn A. R. Murray, "The Administration of a Fighting Service," Journal of Public Administration, 1:216-217 (July, 1923).

APPLICATION OF GROUP PROCEDURES

Many obvious examples can be stated which leads on to the conclusion that group-decision making not only can, but must be utilized in a military organization. The very concept of correct staff functioning, for the military, embodies the necessity of group consideration of various alternatives and the selection of one alternative course of action at each level, before presenting a solution, for final, yes (or no) to the 'man at the top.'

These brief considerations are not meant to imply that there is a requirement that everyone participating in a group process must ultimately agree with the final decision. There is the necessity in the military that once a final decision is rendered, everyone must support it. This is true at the highest level as well as the lowest. This fact and the idea that group-decision making procedures are employed at the highest military levels is substantiated by a recent article on the most well-known military 'group' of the day.²³

No evidence was found to indicate, nor is there reason to believe, that the group-decision process could be successfully applied in all instances of a combat situation. It appears rather obvious that the time allowed between the appearance of a particular problem and the action necessary for its solution is not of sufficient duration to allow the group process to function. This would seem to be more applicable to the tactical decisions necessary at the lower levels than to the higher

²³ _____, "The Management Team," Time the Weekly News Magazine, Vol. 85, No. 6, February 5, 1965, pp. 22-23A

level strategic decisions. In addition, the stress of combat cannot but adversely affect any attempt that may be made to conduct a group session. Experiments conducted in a simulated combat or situation would seem to support this contention, since the importance of the solution and the excessive pressure of time introduces even more stress.²⁴ It can be safely stated, without fear of strenuous contradiction, that there are combat situations in which the group process just will not operate. Nor should it be incorrectly assumed that the use of group procedures prior to such combat experiences would undermine the authority of the individual who finds himself in the position of rendering such individual decisions at the time and place required. The very structure of the organization should eliminate such erroneous postulation.

By reference to these few functions to which many more could be added by the reader, such as: budgeting, personnel administration, morale and welfare, competitive readiness inspections, promotion cycles, and so forth, it can be observed that the group process can be gainfully exercised within the military. As a matter of fact, the process is and has been used, though not in every instance and perhaps not called 'group-decision,' to an increasing extent in military organizations for some time.

²⁴Horowitz, Benson, and Buckley, op. cit., pp. 4-20.

CHAPTER V

SUMMARY AND CONCLUSIONS

If then, there is a choice to be made between the alternatives of using the group process or not, which system would render the most effective, or the best final decision? Through the readings undertaken during the preparation of this report there was little indication of which system will produce the better product. Clearly, there are those problems which might be better decided by the group process and, again, those which must be solved by an individual decision. It's entirely possible that even in a situation which would allow the group procedure to be utilized, the forces present (or lacking) would disallow the use of the process. Once a decision is made in the military, it is acted upon and that exact problem will, most probably, not crop up again. Hence, there is little factual evidence available to make a comparison of procedures used to obtain results in order to give a concrete rating to any particular decision. The basic steps in decision-making are the most important aspect of the procedure to keep in mind (as mentioned earlier) and the use of these rules will enhance the final decision regardless of whether it is made in groups or individually. Due to the advantages of group satisfaction, unifying influence of participants, training of members in the decision-making process, and the greater cooperation of all in the attainment of the final goal, it can be hypothesized that the group procedure should be used, whenever possible, at all levels. The advantage of relieving top decision makers of some of the necessary business of making decisions, or, at least of exhaustive

comparison of alternatives adds further weight to the use of the group process.

It is concluded that the group decision making process can very definitely be used to great advantage in the military organization. By the use of the procedures described herein, as applied to the proffered organization for the military, a more effective pursuit of objectives or goals at all levels is possible. The group decision making process is a valuable tool for the manager, irrespective of his relative position to the organization and regardless of the type organization of which he is a part. Naturally, there are more instances where the system will not be applicable in a military organization, but this does not detract from its usefulness, nor does the fact imply that the principle is at cross-purposes with the authority required in an 'individual decision' climate. The basic controlling variables as regards the method to employ in decision-making situations are depicted in Appendix B, p. 48.

It is recommended that the principles of the process be more widely distributed through the military structure. Additionally, more complete research should be conducted into the relative merits of the group-decision as opposed to individual-decision, to determine more precisely the differential effectiveness of the two types. It is intended that the author of this paper will expand upon the proposal offered herein with regard to the typical military organization. A complete study of the hive-skeleton concept bears promise of offering a more realistic pictorial representation of the actual organization as it really operates. Finally, it is offered that a description of group-decision making and the recognition of the intricacies of the system should become a part of every course of instruction for managers or future managers in the military.

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APPENDIX A

FIGURE I: THE BASIC MILITARY ORGANIZATION.

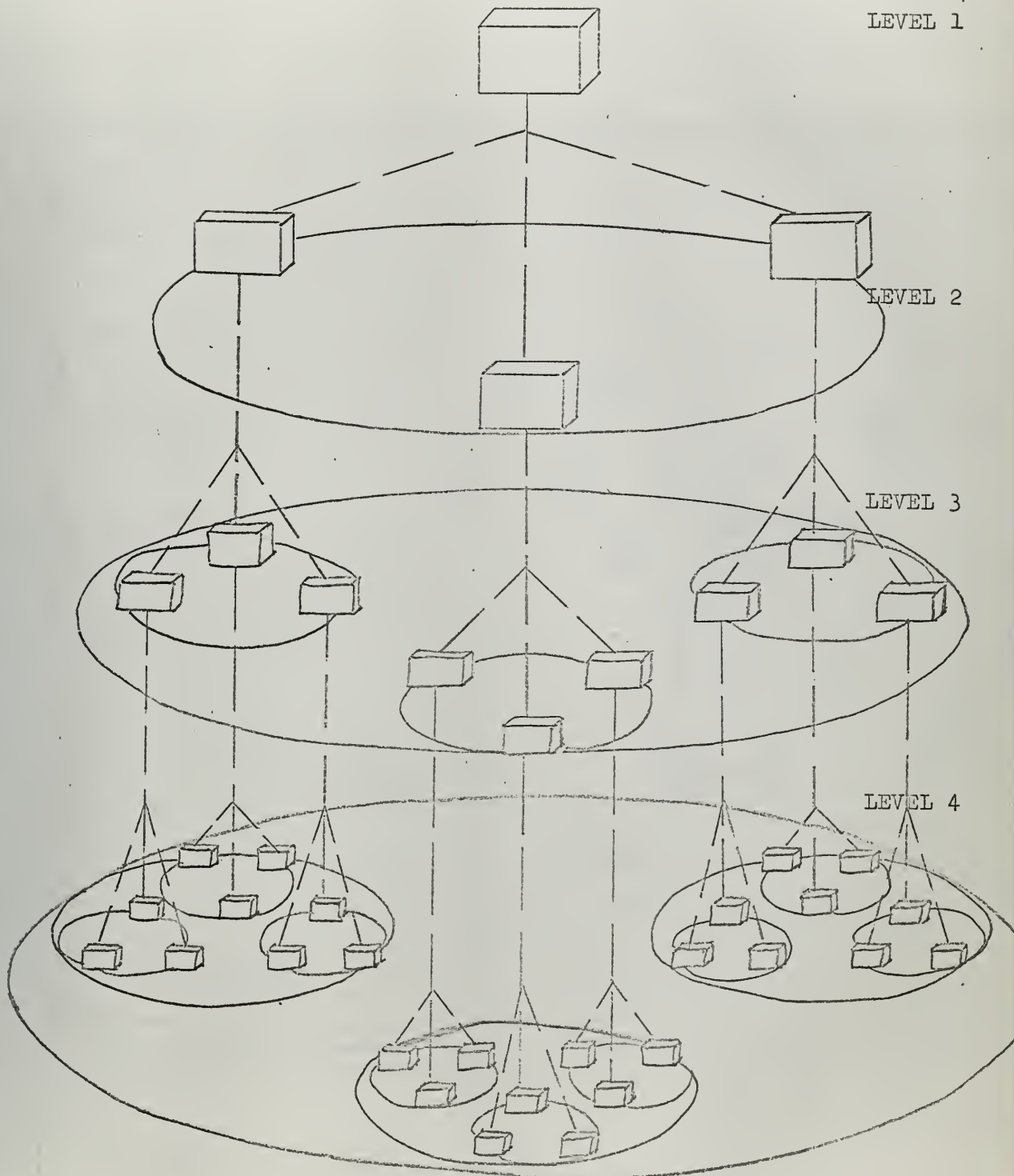






FIGURE III: STAFF OPERATIONAL ORBITS

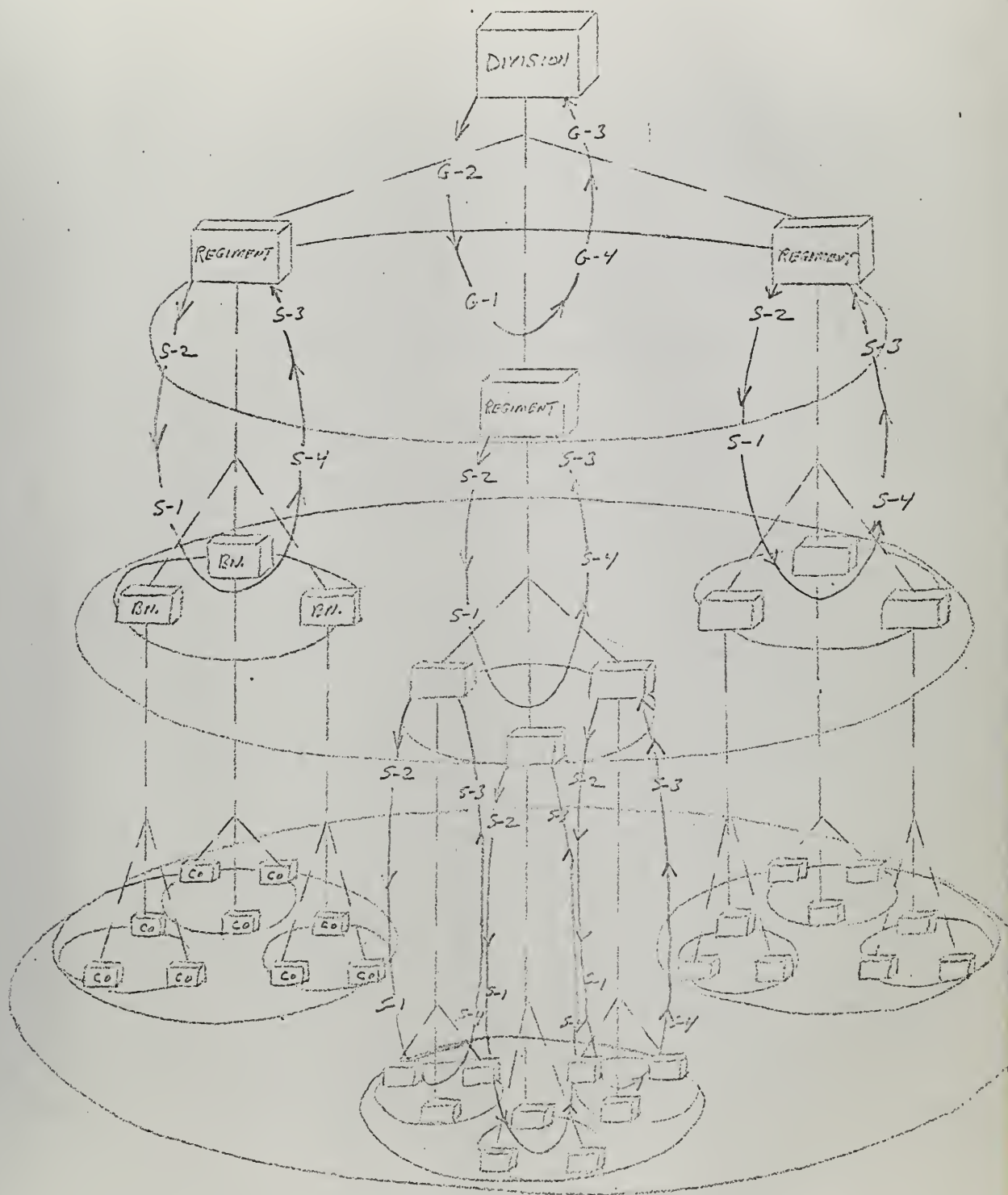
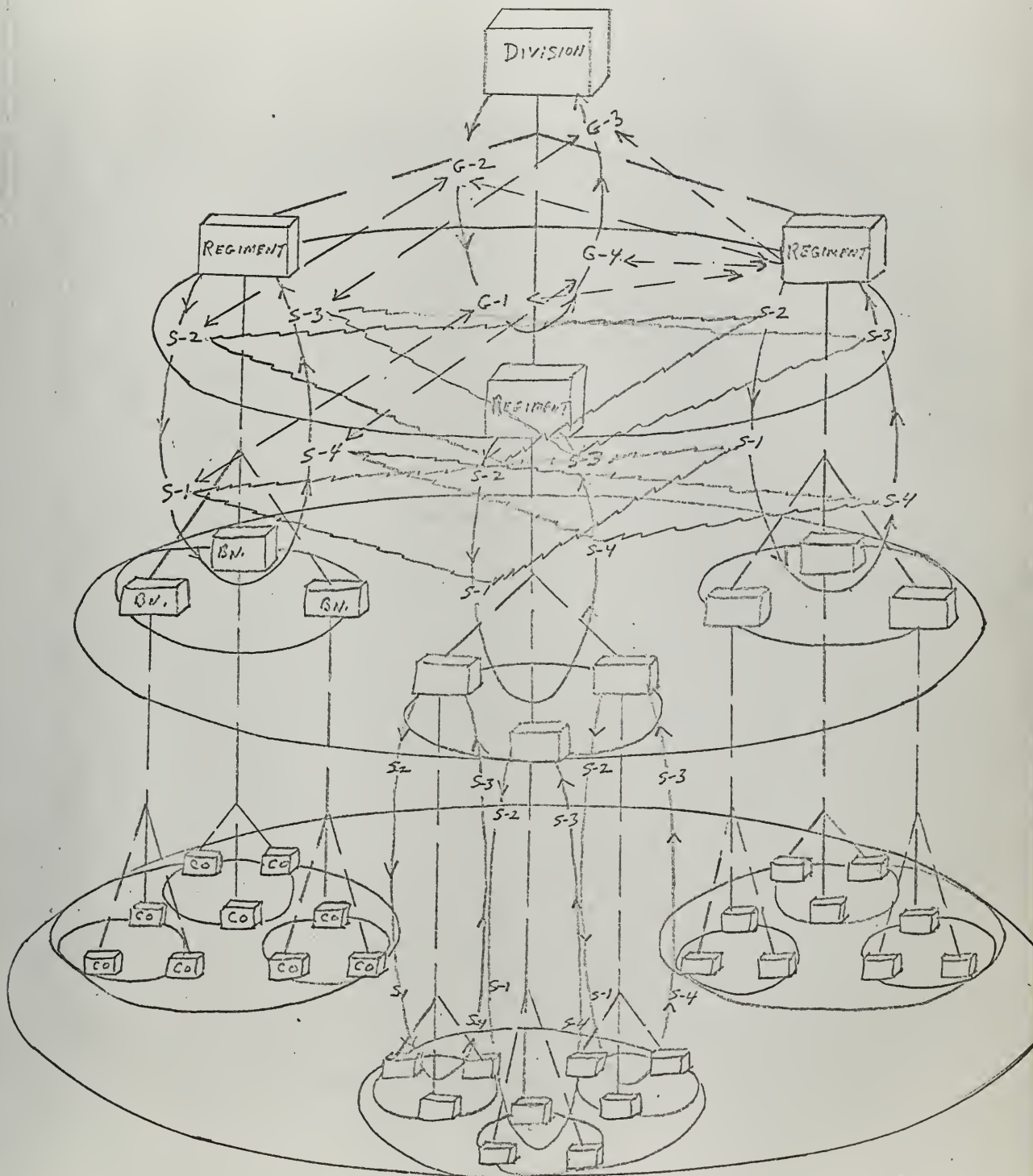


FIGURE IV: SOME PSEUDO-FORMAL LINES
OF INTERACTION



APPENDIX B

ILLUSTRATION I: FINANCIAL RISK EXAMINATIONS

Possibility of Loss	Possibility of PROFIT	Product 1 +40,000 -40,000	Product 2 +50,000 -50,000	Product 3 +60,000 -60,000	Product 4 +70,000 -70,000	Product 5 +80,000 -80,000	Product 6 +90,000 -90,000	Product 7 +100,000* - 95,000
10%	90%							
20%	80%							
30%	70%							
40%	60%							
50%	50%							
60%	40%							
70%	30%							
80%	20%							
90%	10%							

Instructions: Please assume that you own a business with an equity of \$95,000. The engineering department has developed some new products for your consideration. Seven different new products are listed with their possible results across the top. Different probabilities of each result are listed in the left-hand column. Please place an "X" in each blank describing conditions under which you would decide to market each particular product. If you would not market the products under the conditions described, leave the space blank. Consider each product separately; that is, you cannot develop two products at the same time.

Example: If you would develop Product 1 with a possibility of loss of 30%, you would "X" the top three boxes in Column 1. (Note, if 30:70 conditions are the least you would accept, you would certainly accept better odds.) Then, if you would develop Product 2 only with a 10% chance of loss, you would "X" only the first block in Column 2.

***Note:** Loss not equal as you would be bankrupt and unable to lose more than your equity.

Date		Description		Amount	
1890	Jan 1	Balance		100.00	
	Feb 1	Interest		5.00	
	Mar 1	Interest		5.00	
	Apr 1	Interest		5.00	
	May 1	Interest		5.00	
	Jun 1	Interest		5.00	
	Jul 1	Interest		5.00	
	Aug 1	Interest		5.00	
	Sep 1	Interest		5.00	
	Oct 1	Interest		5.00	
	Nov 1	Interest		5.00	
	Dec 1	Interest		5.00	
1891	Jan 1	Balance		100.00	
	Feb 1	Interest		5.00	
	Mar 1	Interest		5.00	
	Apr 1	Interest		5.00	
	May 1	Interest		5.00	
	Jun 1	Interest		5.00	
	Jul 1	Interest		5.00	
	Aug 1	Interest		5.00	
	Sep 1	Interest		5.00	
	Oct 1	Interest		5.00	
	Nov 1	Interest		5.00	
	Dec 1	Interest		5.00	

The above is a statement of the account of the
 interest on the loan of \$100.00, made by the
 Bank of New York, on the 1st day of January,
 1890, to the order of the Board of Directors
 of the New York Public Library, for the purpose
 of purchasing books, and for the interest on the
 same, for the year ending on the 31st day of
 December, 1890. The interest on the loan is
 at the rate of five per cent per annum, and
 is payable quarterly, on the 1st day of each
 month, beginning with the 1st day of January,
 1890, and continuing until the 31st day of
 December, 1890. The interest on the loan is
 paid by the Bank of New York, and is
 credited to the account of the New York Public
 Library, for the purpose of purchasing books, and
 for the interest on the same, for the year
 ending on the 31st day of December, 1890.

ILLUSTRATION I: FINANCIAL RISK EXAMINATIONS

ENGINEERING ESTIMATES OF CHANCES OF SUCCESS & EXPECTED RESULTS					ACCOUNTING EVALUATION OF OWNER'S EQUITY (ASSETS - LIABILITIES)				
	CHANCE OF LOSS	CHANCE OF PROFIT	POTEN- TIAL LOSS	POTENTIAL NET PROFIT	Firm 1 \$47,500	Firm 2 \$42,500	Firm 3 \$37,500	Firm 4 \$32,500	Firm 5 \$27,500
1.	10%	90%	\$45,000	\$ 5,000					
2.	20%	80%	\$40,000	\$10,000					
3.	30%	70%	\$35,000	\$15,000					
4.	40%	60%	\$30,000	\$20,000					
5.	50%	50%	\$25,000	\$25,000					
6.	60%	40%	\$20,000	\$30,000					
7.	70%	30%	\$15,000	\$35,000					
8.	80%	20%	\$10,000	\$40,000					
9.	90%	10%	\$ 5,000	\$45,000					

Instructions: Assume that you own a business which is considering the introduction of a new product. Your Engineering Department could estimate any one of the 9 sets of possibilities listed in the first 4 columns. The next 5 columns represent 5 different firms which you might own. Consider each engineering estimate for each firm, then put an "X" in the square if you would elect to produce the product under the particular conditions. (You might do this in real life so the decision could be routinized for the future.)

ILLUSTRATION II

COMMENTS OF COLLEGE SOPHOMORES IN ANSWER TO

THE FOLLOWING QUESTION CONCERNING RISK

EXAMINATIONS *

Do you think a more rational answer to the problems could have been reached by participation in a small group of three to five persons?

"Yes, because I don't know anything about business - in a group there would be a greater chance of solving the problem because all could help each other - give each other ideas."

"Yes, - supplementing one's knowledge and background would improve one's ability to forecast the outcome."

"Yes, because more views on the subjects could be revealed and discussed."

"Yes, I think an answer could have been reached easier in a group."

"Yes, but I feel it would take much more time because each group would have to be selected through individual abilities, etc. If you just picked 2 or 3 persons at random they would not be able to arrive at a more rational answer. But if they are on a fairly even level, they could discuss the pros and cons and then arrive at a better decision. Otherwise I feel doing it individually is better."

"Yes, particularly if at least one of the persons knew something about business. The problems are rather confusing when one doesn't know what he is going."

"I would have made a better decision if a group had helped in discussing the possibilities of success."

"I do think that this could of been handled better in a small group because the members of this group could bring out some facets that you didn't think of on your own."

"Yes, in my estimation, groups can usually come up with superior answers to problems of this nature - maybe not as quickly as an individual but still more superior."

"Yes. The more persons involved, the better reasoning can be exercised to deduce the problems, if there is organization in the group."

"Yes, because someone in the group might of had some experience in business courses, and would help obtain a much clearer and more logical way of obtaining a solution to the problem."

"Yes, on decisions of this nature involving this many variables other opinions would be invaluable."

*This is just a small representative sampling of the answers received. It's interesting to note that not one of the 'No' answers gave any reason for their answers. Almost all of the postgraduate school replys were simple 'yes or no' answers.

ILLUSTRATION III

AN EXAMPLE OF THE PLANNING PROCESS

IN ARRIVING AT A DECISION

There is very little that is haphazard or disconnected about the array of Admiralty Departments. The noteworthy thing about them is not their number or variety, so much as their close inter-connection and the manner in which they combine to serve those administrative ends which I mentioned at the beginning of my paper. Perhaps I can best illustrate this by describing briefly the procedure followed in the design and production of a new battleship, which always seems to me to be the very romance of cooperation.

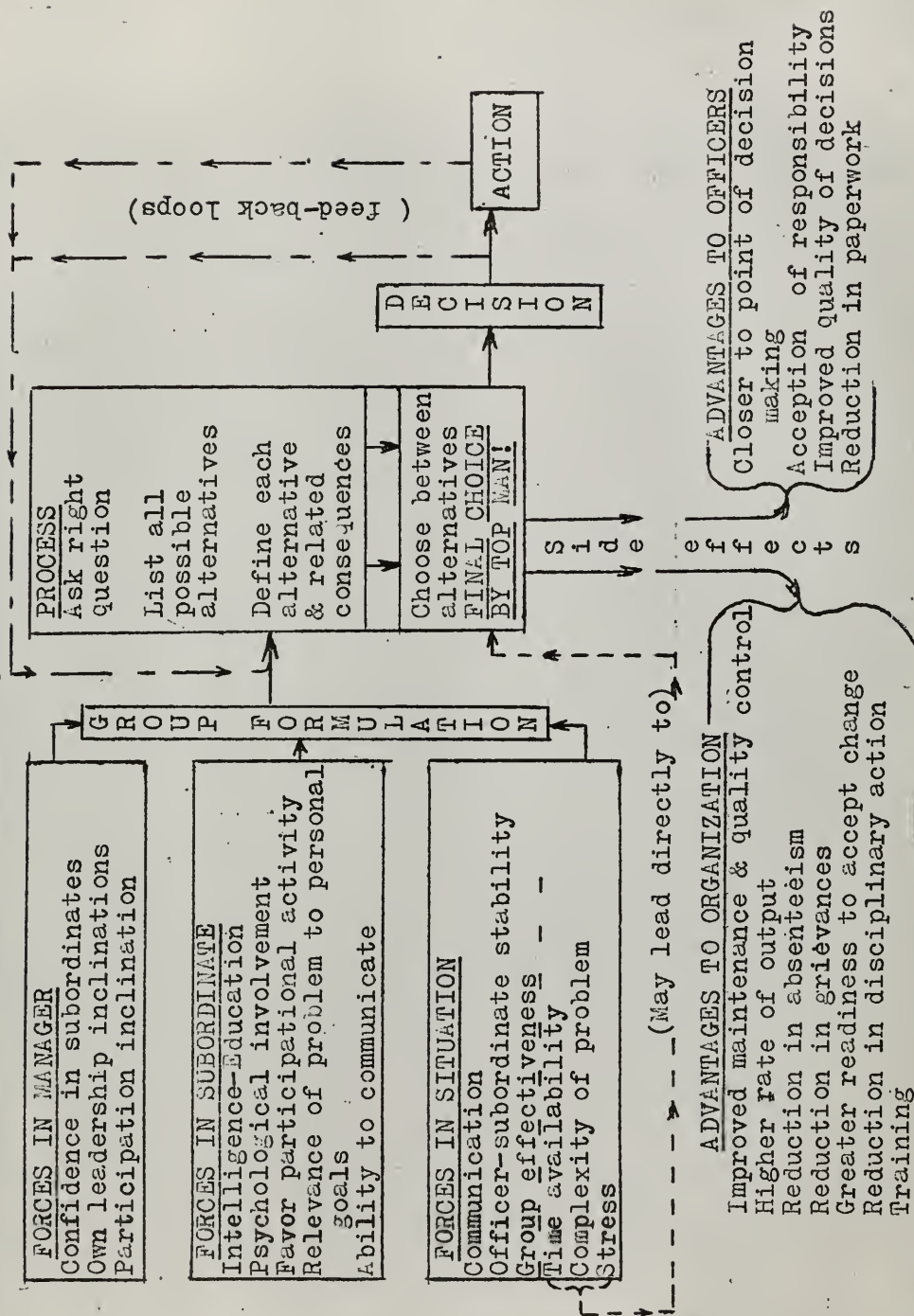
We start with the First Sea Lord and his Assistant Chief of Naval Staff laying down in general terms the features that they desire to see embodied in the new design - the speed, the radius of action, the offensive qualities, the armour protection. Thereupon the Director of Naval Construction, acting under and in consultation with the Controller, formulates provisional schemes outlining the kind of ship desired, together with forecasts of the size and cost involved by the different arrangements. To do this he and his officers must have a good general knowledge - in itself only attainable by close relations with those in charge of these matters - of the latest developments and ideas in regard to a great range of subjects - gunnery, torpedo engineering, armour, fire-control, navigation, signaling, accommodation, and so on - in order to be reasonably sure that the provision included in his schemes is such as is likely to satisfy the experts in all these subjects, when the time for active cooperation arrives.

With these alternative schemes before them the Sea Lords agree on the general lines of the new ship, which done, the actual preparation of the actual designs begins. The dimensions and shape of the ship are drawn out approximately by the naval constructors. Then the Engineer-in-Chief and his Department are called in to agree upon the arrangement of the propelling machinery, the positions of shafts, propellers, bunkers, funnels, etc., and at the same time the cooperation of the Director of Naval Ordnance is required to settle the positions of the guns with their barbettes, and magazines and shell rooms and the means of supplying ammunition to the guns in action.

An understanding between these three main departments enables further progress to be made. The cooperation of the Director of Torpedoes and the Director of Electrical Engineering is now called for to settle the arrangements for torpedo armament, electric generating machinery, electric lighting, etc. So the design progresses and is elaborated from the lower portions upwards, and presently the Director of Naval Construction is able to consult the Director of Naval Equipment as to the proposed arrangements in regard to the sizes and stowage of the motor boats, steamboats, rowing and sailing boats to be carried, as well as of the anchors and cables; the Director of the Signal Department as to the wireless telegraphy arrangements; the Director of Navigation as to the arrangements for navigating the ship, and so on. In this way the scheme goes on growing in a tentative manner, its progress always being dependent on the efficiency of different parts, until ultimately a more or less complete whole is arrived at in the shape of drawings and specifications provisionally embodying all the agreements. This

really is the most difficult and interesting stage, for generally it becomes apparent at this point that requirements overlap, and that the best possible cannot be achieved in regard to numbers of points within the limit set to the contractors. These difficulties are cleared up by discussion at round-table conferences, where the compromises which will least impair the value of the ship are agreed upon, and the completed design is then finally submitted for the Board's approval. Some fourteen departments are concerned in the settlement of the final detailed arrangements.

ILLUSTRATION IV: FACTORS INVOLVED IN GROUP DECISION MAKING PROCESSES IN THE MILITARY





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The application of group decision making



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